

Work Environment and “Opt-Out” Rates at Motherhood Across High-Education Career Paths

Data Appendix

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Data Appendix

The Harvard college graduating classes of 1988 through 1991 included 6,764 students, of which 41 percent were female. This sample reflects those individuals listed in either their 10th or 15th anniversary reports, which includes anyone for whom the alumni association had a current or previous address, including parent’s address. (For those who do not respond to the survey, the report lists only the name and address.) We focus on the 3,456 who responded to the 15th-year survey (51 percent of the sample overall, with a larger 55 percent of women).¹ Appendix Section A discusses the representativeness of the population who respond to the survey. Of these 3,456 graduates, 1,522 (44 percent) are women.

Our main sample is the 934 women who are married and have had their first child at the time of the 15th anniversary survey; Table A-1 reports additional summary statistics for this sample.² For 743 of these women (80 percent), we can supplement these data with additional information from their 10th anniversary survey. From these, we separately focus on the 286 women that we observe both 10 and 15 years after college, who had their first child between these two points, who provide labor force and occupation data at each, and who do not hold a PhD or MD.

For the purpose of our analysis, we define a woman’s labor supply based on her self-reported current occupation, supplemented by information provided in her narrative.³ For a small number of women, we infer that they are at home if they provide detailed information for their spouses’ occupation, but none for their own. Or, if they listed two occupations, such as “Attorney, Mom”, we assumed the second reflected her current situation and the first her occupation before leaving the labor force.

A Sample Selection into the 15th-Year Anniversary Report

We next consider the representativeness, among female Harvard graduates, of the population who respond to the 15th-year anniversary survey.⁴ Table A-2 reports mean background

¹This number includes 84 individuals captured because their spouse – a Harvard graduate in one of the four years covered – provided information for both. (We also use spouse data to supplement details missing from the self-reported information.) For those married to members of a different class, this means that the information reflects a period shortly before or after the 15th year.

²This excludes 27 mothers who are unmarried at the time of the 15th.

³Because we define ‘at home’ status based on current employment, women who report that they recently went back to work or that they anticipate leaving soon, are defined as ‘at work’. Maternity leaves are coded as ‘at work’, but women who report that they are ‘on leave’ from their past position are coded as ‘at home’.

⁴There is evidence that graduates who are married and/or have children are generally more likely to respond. For instance, taking the sample who report the year of their first birth in their 15th-year response, we can compare the 10th-year response rates of those who had their first birth in the 2 years prior to the 10th-year reunion, to those who have their first birth afterwards. In both genders we find higher response rates among the already-parents, although the difference is only statistically significant among men. Likewise,

characteristics available from the graduation yearbooks, comparing those women who are and are not observed in the 15th-year survey. Looking at the first set of columns, there is clear evidence that the women observed at the 15th year are a non-random sample of all Harvard graduates. In particular, if we use these background characteristics to predict who will respond to the survey, a χ^2 test of their predictive power is highly statistically significant. Comparing across background characteristics, the most striking difference is by race: whites are more likely to respond.

Because our analysis focuses on the comparison of women who choose different graduate programs, an important question is whether selection into the sample varies systematically among women of different education types. Unfortunately a direct comparison is infeasible because we cannot observe the graduate education of those women who do not respond. However as an indirect test, we can compare the response rates among Harvard graduates in the undergraduate majors that are the primary feeders for three of the graduate degrees considered: biology (MDs), political science (JDs), and economics (MBAs).⁵ Because masters and doctoral degrees are granted across all fields, we have no similar means to compare reporting propensities for MAs and PhDs, or for those who get no additional schooling.

The foot of Table A-2 compares the 15th-year response rates for all female graduates to the response rates for women in these three majors. As we see, potential MBAs are the most likely to respond. Their response rate is significantly higher than all other majors combined, and than either potential MDs or JDs. (This might reflect the nature of the business world relative to other career paths, if MBAs are more likely to view the anniversary surveys as a networking mechanism.) This higher response rate, however, does not translate into a more representative sample. We instead find that as with potential JDs, among potential MBAs, background characteristics can predict who will respond (significant at the 5 percent level), whereas among potential MDs the response rate appears more random.

In combination, these results show two things. First it is clear that our responding sample is not randomly drawn from the full pool of Harvard graduates. In particular, in direct contrast to the NSCG sample, our Harvard sample under-represents minorities.

we see that among women (but not men), those who married recently before the 10th-year reunion are significantly more likely to respond, and among men (but not women), those who recently finished their primary degree are more likely to respond.

⁵Among all respondents to the 15th year survey who have an MD, 38 percent hold a BA in biology. Similarly, among observed biology majors, 66 percent go on to get an MD. Among observed MBAs, 23 percent studied economics, and 44 percent of observed economics majors get an MBA; among JDs, 15 percent studied political science, and 44 percent of political science majors complete a JD. (Among all observed JDs, a larger 23 percent studied English. Among observed English majors, however, although 24 percent complete a JD, this is followed closely by 23 percent who get an MA, and 23 percent who complete no graduate degree. For that reason we do not treat an English undergraduate degree as a feeder for a law degree.)

Furthermore, because our results suggest that minority women tend to work at higher rates, all else equal, our sample may therefore include a higher proportion of at-home mothers than among the full population of female Harvard graduates. (This may be tempered somewhat by the lower response rates among those who attended a private school, a characteristic that is instead associated with lower labor force participation among the observed sample.)

Our second result is that the level of selection likely varies across women who choose different career paths. For instance, based on the three degrees that we can match to specific undergraduate majors, we see that the observed sample of potential MDs is less strongly selected than the sample of either potential MBAs or potential JDs. Beyond the difference in reporting rates by race that is evident across all women, it is not obvious how these selection patterns will affect our overall results.

As a check, we therefore build a predicted probability of being included in our final sample – those women who respond to the 15th year anniversary survey and are married and have had a child by that point – based on characteristics observable at the time of graduation from college. We find that women included in our sample have a mean predicted probability of 0.40 of meeting these criteria, which is completely invariable across degrees (from 0.39 to 0.40). Furthermore, if we include this predicted probability as a control in the labor supply probits in Table 5, it has no effect on the variation across degrees, and is itself completely uncorrelated with labor force status.

B Selecting Parenthood

One worry in considering the effect of work environment on mothers' labor force participation is that work environment may influence the initial decision to have children. If some women in inflexible jobs respond by foregoing children, the average taste for kids among those who become mothers will be higher among mothers from an inflexible environment. If this is then positively correlated with taste for time at home, mean labor force participation rates among those women will be driven downwards because of this stronger taste for time at home.

A first, indirect, test of whether work environment influences the decision to have children, is to compare across graduate degrees the proportion of women who are mothers. If, for instance, MDs are more likely to work in a flexible environment, this may translate into a larger proportion having children.

Using the full Harvard sample, we test whether the proportion of mothers varies by graduate degree. We find that MDs are most likely to have children, followed closely by MBAs (both rates significantly higher than the average overall), and PhDs are significantly

less likely to be mothers. Since we see the highest rates of motherhood among MDs and MBAs - the former the group *most* likely to work, and the latter almost the *least* likely, if this difference in labor supply reflects systematic variation in flexibility, then by this admittedly weak test, there is no evidence suggesting that work environment influences the decision to have children.

For the Harvard longitudinal sample we can test this more directly. Expanding this sample to include women with no children (but who otherwise fit our sample criteria), we find that women who were in inflexible environments 10 years after graduation are equally likely to have children as those who were in flexible jobs. The proportion is likewise almost exactly equal just among the women with MBAs. Thus we again find no evidence that work environment influences the propensity to have children.

A second consideration is whether there is evidence of selection into parenthood on ability. If mothers are systematically positively selected, this will increase their marginal benefit of working and thus raise their labor force participation. If the level of selection varies across graduate degrees, this may drive some of the observed variation in work rates.

To test for such possible selection in the Harvard sample, for those women with a graduate degree we compare the proportion who attended a top-10 graduate program. By this admittedly noisy measure, in this sample we find no evidence of selection into parenthood on ability. The mean proportion who attended a top-10 graduate program is almost exactly equal among mothers and non-mothers, both for the sample as a whole and within each graduate degree.

Because the Harvard longitudinal sample focuses on mothers who have their first birth more than 10 years after graduation, we also consider whether there is evidence of selection on ability into ‘late’ motherhood. For MBAs (and to a lesser extent MAs), we do find some evidence of positive selection. Whereas among ‘early’ MBA mothers only 56 percent attended a top-10 program, a significantly higher 79 percent of late mothers did so.

Comparing these late mothers to non-mothers, we generally find no difference in the proportion who attended a top-10 program by the flexibility of their 10th-year work environment. The one exception is again among MBAs. Among those who worked in an inflexible environment, 89 percent of the women who ultimately had children attended a top-10 program, compared to 71 percent of non-mothers (significantly different at the 10 percent level). There is no such difference among the MBAs who worked in a flexible environment.

In combination, these two findings suggest that within the longitudinal sample of Har-

vard mothers, the MBAs are an especially high-ability group. This selection may therefore bias downwards the level difference in labor force participation between these MBAs and the mothers with other graduate degrees.

C Distribution of Jobs by Degree 15 Years after Graduation

The following provides more detail on the types of jobs held by our Harvard sample, among those working 15 years after graduation:

- **MDs:** The majority of MDs work in specialties centered on women, children, and family: 31 percent in pediatrics, 13 percent in obstetrics/gynecology, and 8 percent in family medicine. The next largest specialties are psychiatry (6 percent), emergency medicine (5 percent), and surgery (5 percent). Among these women, all are working in jobs clearly related to their degree, as either practicing physicians or scientific researchers.⁶
- **PhDs:** Among the PhDs, 47 percent are tenure-track professors. The next largest groups are scientists working in industry (10 percent) and non-industry research settings (11 percent). An additional 11 percent are psychologists, 6 percent work in non-science industry jobs, 6 percent are writers, and 3 percent are in non-tenure track academic positions. Of all, roughly 20 percent work in jobs that may not necessarily require a PhD, for instance as school teachers, writers, or in certain industry jobs.
- **JDs:** The majority of JDs work in law firms (43 percent, of which 55 percent work at one of the 250 largest law firms in the country) or as corporate counsels (14 percent). The remainder work primarily in nonprofit or public-sector environments: 15 percent within government, 9 percent in academia, and 11 percent for other nonprofit institutions.⁷ Of all, only 8 percent work in positions that might not require a JD, primarily in business or certain public policy positions.
- **MBAs:** Among MBAs, the two most common occupations are in the financial sector (27 percent) and consulting (17 percent). An additional 31 percent work in industry: 13 percent in technology, 10 percent in biotechnology/pharmaceuticals, and 8 percent in other industries. Thus 75 percent of MBAs work in finance, consulting or industry. Only 20 percent work for nonprofits, including 7 percent in education (as teachers or otherwise associated with educational institutions).⁸

⁶Among MDs we can only observe the specialty for 70 percent, whereas for the other degrees we can use occupation or firm to distinguish the field for over 90 percent of those working.

⁷Among women observed 10 years after graduation who have not yet had children, a higher fraction (55 percent) worked at a law firm (57 percent of these in large firms) and 8 percent as corporate counsels, compared to 22 percent in government, 7 percent in nonprofits, and 5 percent in academia.

⁸At the 10th, 92 percent of not-yet-mothers work in finance, consulting or industry – 26 percent in finance and 28 percent in consulting – and only 5 percent work for education or other nonprofit institutions.

- **MAs:** By comparison, more than half of MAs work in nonprofit environments or the public sector: 24 percent in education (of which only one-third are teachers), 9 percent in healthcare, 15 percent in other nonprofit institutions, and 5 percent in other government positions.⁹ Only 7 percent work in consulting, 4 percent in finance, and 6 percent in industry. An additional 6 percent work in news, 5 percent in architecture, 5 percent in publishing, and 10 percent as artists or writers.
- **No Degree:** The occupation and sector mix of women with no graduate degree reflects a mix of those observed among MBAs and other MAs. For instance, like MBAs, the largest proportion work in the financial sector (16 percent), and an additional 5 percent work in consulting and 20 percent in industry. Like MAs, however, many (24 percent) work in nonprofit environments or the public sector, including 10 percent in education and 11 percent in other nonprofits. An additional 6 percent work in publishing, 6 percent in news, and 5 percent in advertising, plus 16 percent as artists or writers.¹⁰

D Estimating Wages and Spouse's Salary

Despite this rich professional data, we lack information on salaries and wages. We therefore had a career consultant build imputed salaries, for both mothers and their spouses, based on self-reported education, location, occupation, and firm. He used sources such as the Bureau of Labor Statistics' Occupational Employment Statistics, information from the Chronicle of Higher Education, and online sources such as CareerJournal.com, PayScale.com, Vault.com, and Indeed.com. For example, to determine the salary of an assistant US attorney, he used salaries reported on a Justice Department website for attorneys with similar years of experience. All salaries are updated to year 2000 dollars using the Consumer Price Index for all urban consumers (US city averages for all items).

Because these salary estimates are based on occupation-specific averages, one worry is that they will systematically understate the salaries received by this population of Harvard graduates. As a rough comparison, we can compare our values to those reported for women in the Harvard & Beyond sample (Goldin and Katz 2008). They report a mean 2005 full-time/full-year salary of \$99,500 (in year 2000 dollars), although because this reflects a combined value for cohorts graduating in approximately 1970, 1980, and 1990, it may be a poor estimate of the salaries received by the youngest cohort.¹¹ By comparison, doing a

⁹Among non-parents observed at the 10th, a similar half work in the public or nonprofit sectors.

¹⁰Among non-parents observed at the 10th, 37 percent work in finance, consulting or industry, and only 19 percent are in nonprofit or public sector jobs.

¹¹It is unclear whether this suggests that this number over- or under-states the earnings received by the 1990 cohort. If there is a strong earnings gradient in experience, mean 1990 cohort salaries may be lower; but if recent cohorts have greater representation among high-paying positions, 1990 salaries may be higher.

back-of-the-envelope calculation, we estimate average annual salaries of \$106,000.¹² Thus from this (admittedly poor) comparison we see no evidence that our starting salaries are systematically too low for the female Harvard graduates.

Likewise, if we compare our wage estimates for the working population of Harvard mothers to the wages of working mothers in the NSCG (with Harvard wages calculated via the method described below), the Harvard wages are systematically higher.¹³ Thus although the building blocks for our salary estimates are based on occupation-specific averages, Harvard women are clearly distributed across a different, higher-paid, set of jobs.

Even if our initial salary estimates are too low for this population of women, this is only problematic if the relative understatement varies across graduate degrees. Unfortunately Goldin and Katz (2008) does not provide average salaries by degree. The only data available for a relevant comparison group (in terms of age, cohort, and education quality), that provides information by specific degree, are data for a recent cohort of graduates from the Booth School of Business at the University of Chicago (Bertrand *et al.* 2010).

Bertrand *et al.* report significantly higher earnings for MBA mothers than our estimates for these Harvard graduates. Measured 8 years post-MBA (approximately 15 years after college, given their average age at entry), they find mean and median annual salaries of \$192,000 and \$138,000, respectively (in year 2000 dollars). Given reported labor supply levels, these translate roughly into mean and median hourly wages of \$79 and \$61, both of which are higher than our estimated hourly wage of \$50. Yet if our wage values for these MBA women are especially understated compared to our estimated wages for the other degree groups, this will only dampen our result that MBA women are less likely to work.

This potential understatement of earnings may be more problematic in terms of spouse's salaries. Goldin and Katz (2008) report average annual salaries of \$165,300 for men in the Harvard & Beyond sample. (Again, because this value reflects information for all three cohorts, in this case this likely overstates the earnings of the youngest generation.) By comparison, looking only at the Harvard women who are married to Harvard men, our mean estimated spouses' salaries are much lower at \$123,900.

¹²As discussed below, our initial salary estimates reflect "gender-neutral" values. This average uses a back-of-the-envelope calculation of "gendered" salaries by applying our motherhood wage gap values to our initial gender-neutral salaries (thus ignoring the differences in labor supply by parental status). See below for greater detail on how we calculate these wage gap ratios.

¹³For instance, using the sample described in footnote 22 of the main text, MDs earn on average \$52 per hour (in year 2000 dollars), JDs and MBAs earn \$41 to \$42 per hour, and MAs and women with no graduate degree earn \$26. (These calculations use 2002 earnings and 2003 average weekly hours, assuming 50 weeks worked per year, and excludes values for women working fewer than 10 hours per week, and wages of less than \$6 per hour or greater than \$300.)

Furthermore, given the high rate of intermarriage by graduate degree, this may be especially important if we are systematically understating the earnings of MBA men. Goldin and Katz find especially high salaries for the MBA men¹⁴, and likewise, Bertrand *et al.* (2010) find mean and median earnings of \$337,000 and \$177,000, respectively. By comparison, we estimate average salaries of \$120,800 for Harvard-graduate spouses holding MBAs.

Thus, potential underestimation of earnings for husbands holding MBAs may help explain the especially low labor force participation rates observed among our sample of Harvard MBA women. Yet given the size of the level differences, and the fact that they remain after controlling for spouse's graduate degree, it seems highly unlikely that it would explain the full effect. Furthermore, in a sensitivity analysis in which we instrument for spouse's salary using distribution dummies, and force into the top 5 percent those spouse's with job titles suggesting especially high earnings, the degree coefficients are unchanged.¹⁵

Taking these salary estimates as our starting point, note that since we did not provide gender or parental status to our career consultant, our values reflect "gender neutral" salaries. (We did not want him to incorporate his own statistical discrimination into these numbers.) To translate these salaries into "gendered" wages for our population of Harvard women, we use the following approach. (Because most of the Harvard spouses work in generally male fields, we do not adjust their salaries.)

- To provide a population at roughly the same stage of their careers as our Harvard sample, we use an NSCG sample of men and women ages 30 to 45 (and otherwise selected as described in footnote 22 of the main text. We then create detailed graduate degree and occupation groupings to capture the types of jobs observed among our Harvard women.
- We calculate average weekly hours using the full sample of men and women in a given degree/occupation group. Assuming 50 weeks worked per year, we apply these numbers to our gender-neutral Harvard salaries to create "gender-neutral" wages.
- Because much of the gender wage gap arises only after children (Bertrand *et al.* 2010), within each degree/occupation group we calculate separate measures of the gender wage gap for women with and without children. In particular, we use the NSCG data to calculate two ratios: the average experience-adjusted wages of women with children compared to the average wage overall, and likewise the average experience-adjusted wages of women without children compared to all. We apply these ratios to our "gender neutral" values to calculate "gendered" wages.

¹⁴Personal communication with Lawrence Katz, December, 2008.

¹⁵Before this adjustment, more than half of the men in this group are MDs (with mean estimated earnings of over \$300,000); in this adjustment we re-categorize 21 men, of which 19 hold MBAs.

- For doctors, because the NSCG lacks area of specialty (*e.g.*, pediatrics), to calculate “gender-neutral” hourly wages we rely on average weekly hours data per specialty as reported in the American Medical Association’s *Physician Socioeconomic Statistics, 2000-2002*. Because this source does not provide salary data by gender and parental status, we must rely on the NSCG data to transform these into “gendered” wages. There exist large differences in gender distribution across medical specialties, however, and likewise large differences in salary by specialty.¹⁶ We therefore build the wage ratio for mothers by comparing their average wages to average wages for all *female* doctors. This effectively assumes that the distribution across specialties is the same for female doctors, regardless of parental status, and that the scaling ratio is 1.0 for non-moms.
- For MBAs, the NSCG captures too few women who work in high-level management positions to distinguish across sectors (we group finance and consulting, high tech and other science-related industries, and all other fields). Because high-level MBAs work longer hours, we use average hours for this combined set to calculate gender-neutral wages. To scale these into “gendered” wages, we then use wage ratios calculated separately for the three sectors, after combining the high- and non-high level MBAs.¹⁷

The first lines of Table A-3 lists our initial gender-neutral salary estimates for the working Harvard women, and our subsequent “gendered” wage values. These represent year 2000 dollars, calculated using the Consumer Price Index for all urban consumers (US city averages for all items).

To estimate wages for the non-working women and those with missing values, we use the following approach.¹⁸ We begin by estimating a woman’s predicted probability of working, \hat{p} , built from a specification that excludes wages. To allow for selection out of the labor force, we split the sample by the degree-specific medians of \hat{p} , and estimate wages separately within each half of the distribution.¹⁹ The controls in the wage equation include graduate degree, years experience since completing that degree, 10th-year wage interacted by degree, and region. Table A-3 reports mean predicted log hourly wages, both for the sample as a whole, and separately for those women working and those at home.

¹⁶For instance, among our Harvard sample, 27 percent are pediatricians (with an average gender-neutral estimated salary of \$136,000) and 5 percent are surgeons (estimated salary of \$219,000). By comparison, among the full population of doctors reported in the *Physician Socioeconomic Statistics, 2000-2002*, 11 percent are pediatricians and 19 percent are surgeons.

¹⁷This provides scaling ratios of 87 to 91 percent. These line up well with an estimated scaling ratio of 88 percent calculated using median hours and salary data for the MBA graduates of Chicago’s Booth School of Business (Bertrand *et al.* 2010).

¹⁸For 10 percent of those working, we lack 15th-year salaries because we lacked sufficient occupation data.

¹⁹This amounts to assuming selection on observables, and is in the spirit of Blau and Kahn (2007), who use only women who work fewer than 20 hours per week to predict wages for women who are out of the labor force. As an alternative approach we estimate wages including the whole sample, thus assuming no selection. The results are qualitatively similar throughout the analysis.

E Other Variable Definitions

Lastly, for other variable definitions:

- For women with more than one graduate degree, we categorize the professional degrees (JD, MBA, or MD) as the primary degree, or define the primary degree based on its alignment with their occupation. For instance, women with an MD/PhD who are practicing doctors are categorized as an MD. We define an LLM, masters of law, as a JD for those practicing law with no additional law degree. When controlling for extra degrees, we exclude those MAs that appear to be an intermediate step towards a completed PhD.
- We define gender, as well as race and ethnicity, as best estimated from yearbook photos and graduates' names.
- For MDs, JDs, and MBAs, we define top-10 graduate programs using the *U.S. News and World Report* professional school rankings for 2001. Because we often lack specific field for many PhDs and MAs, we define top-10 status based on the *U.S. News and World Report* 2001 rankings for top research universities. Likewise, for the spouses, we define the top 20 undergraduate programs using the 2001 rankings of the top 15 research universities and the top 5 liberal arts schools (excluding all-women's colleges).
- We define an undergraduate major as small if fewer than 50 individuals graduated in that major, using the full sample of graduates from the classes of 1988 through 1991 that we can observe in the graduation yearbooks.
- We define own and spouse's age based on year of graduation from college, assuming all were 22 at the time. We define spouses to be of the same age if, by this measure, they are the same age, or ± 1 year.
- We use Peterson's *Private Secondary Schools* and the yearbook information on the high school attended to distinguish which graduates attended a private school.
- We classify the top 25 cities, using 1990 population, as our measure of 'big' cities.
- We define a person as having grown up in a 'low-density' state if their state of residence in high school had a year 2000 density of fewer than 100 people per square mile.
- To estimate whether the first child is born before graduate school, we estimate average schooling lengths as follows: for PhDs we assume 8 years for the humanities, 7 years for the sciences, 10 years for education, and 6 years for economics (Russo 2004; Berger 2007). We assign a length of 8 years for those with an unknown field, but, as with all degrees, we bound the length to have begun at the year of college graduation. For

professional non-business masters we assume 2 years, except for architecture degrees (3 years) and British degrees (1 year). For those with an MA or MS in an undefined field, where some of these degrees will reflect 2-year programs and others longer, unfinished PhDs, we assume an average length of 2.5 years. Most of the women estimated to have had their first child before entering graduate school attended programs with concrete lengths (JDs and specific MA programs).

F Other Tables

Table A-4 lists the firms included in *Working Mother* Magazine’s 2001 list of “Best Places” to work, and the Yale Law Women’s 2004 list of “Top-10 Family Friendly Firms”. This section then reports the results of predicting graduate degree type (Table A-5) and, given graduate degree, 10th-year work environment (Table A-6), based on characteristics observable at graduation from college (C_i).

Each column of Table A-5 reflects the coefficients from a different probit regression in which the dependent variable is whether a given woman i has a specific graduate degree, *e.g.*, a JD. As expected, we see that biology majors are especially likely to get an MD, economics majors are especially likely to get an MBA, and political science majors are especially likely to get a JD. We also find, however, that other factors are correlated with this choice, such as region of residence and race. Notice, for instance, that graduates who grew up in DC are much more likely to get a JD.

Table A-6 reports the coefficients on C in an OLS prediction of 10th-year work environment, F_{i10} , using our longitudinal sample. We include as necessary interactions between individual elements of C and graduate degree S_j .²⁰ The first column reports the marginal effect for factors that are not interacted by degree; the following four columns report the coefficient on the interaction term between the given control and each graduate degree.

Table A-6 shows that the factors observable at college graduation are clearly related to the types of jobs women hold 10 years later. For instance, undergraduate major has a strong relationship with whether a woman subsequently works in a flexible job, although the direction of sorting varies across degrees. For instance, we see that JDs who study the social sciences (*e.g.*, political science, economics, and psychology) are more likely to choose flexible jobs compared to those who studied English or history (the other majors common among JDs). By comparison, among MAs, whereas those who studied other social sciences (*e.g.*,

²⁰We include interactions only in those instances in which at least one interaction term is individually significant, and significantly different from another interaction term. We also only consider interactions for those elements of C which have a sufficient distribution across degrees (at least 5 women in each C x degree cell).

anthropology) are more likely to choose flexible jobs, those who studied economics are not. Place of origin and sports participation are also related to subsequent job choices, again at times with varying effects across graduate degree groups.

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Table A-1: **Additional Summary Statistics**

Graduate Degree:	All	MD	PhD	JD	MBA	MA	None
Minority (%)	16.6	24.5	11.6	17.0	21.1	11.6	12.5
Private high school (%)	35.7	32.7	32.6	35.8	40.6	36.7	35.3
Additional graduate degree (%):							
MA	14.0	20.1	22.2	13.8	8.7	7.2	-
non-MA	2.2	3.9	0.9	2.6	2.2	1.2	-
Child before graduate school (%)	3.4	0.6	0.9	5.1	2.9	6.0	-
Age gap with spouse:							
Older (%)	8.0	9.7	6.0	7.1	5.8	7.2	8.0
Years, if not older	1.4	0.9	1.2	1.5	1.6	1.8	1.2
	(2.7)	(2.2)	(2.4)	(3.5)	(2.9)	(2.8)	(2.5)
Spouse attended top-10 graduate institution (%)	48.3	36.2	48.5	45.1	64.2	43.0	56.0

NOTES: Reported mean (and for continuous variables, standard deviations).

Table A-2: Characteristics of Responders vs. Non-Responders to 15th-Year Survey

Characteristic:	All Women		Biology Majors (potential MDs)		Economics Majors (potential MBAs)		Political Science Majors (potential JDs)	
	Respond	Do Not Respond	Respond	Do Not Respond	Respond	Do Not Respond	Respond	Do Not Respond
Race: (%)								
White	0.80	** 0.69	0.66	* 0.52	0.76	+ 0.62	0.86	** 0.58
Asian	0.12	** 0.17	0.23	+ 0.35	0.15	0.22	0.06	+ 0.14
Other	0.08	** 0.14	0.10	0.13	0.08	0.16	0.07	** 0.26
Region in High School: (%)								
New England	0.24	0.25	0.20	0.22	0.33	0.25	0.31	* 0.17
Middle Atlantic	0.27	0.25	0.26	0.25	0.26	0.20	0.22	0.27
DC Region	0.06	0.06	0.06	0.03	0.04	0.02	0.04	0.06
South	0.10	0.09	0.09	0.11	0.08	0.07	0.10	0.08
Midwest	0.13	0.12	0.14	0.11	0.14	0.22	0.14	0.09
West (excluding CA)	0.04	0.04	0.08	0.07	0.04	0.00	0.06	0.05
California	0.12	0.12	0.13	0.15	0.09	0.04	0.11	0.17
Outside of US	0.04	** 0.07	0.05	0.05	0.03	** 0.20	0.02	* 0.10
Private High School (%)	0.33	+ 0.37	0.23	0.32	0.28	0.27	0.27	0.31
Undergraduate Major: (%)								
Arts	0.04	+ 0.06	-	-	-	-	-	-
English	0.22	0.20	-	-	-	-	-	-
Cultural Studies	0.09	* 0.12	-	-	-	-	-	-
Anthropology	0.07	** 0.04	-	-	-	-	-	-
History	0.11	0.10	-	-	-	-	-	-
Political Science	0.07	0.08	-	-	-	-	-	-
Social Studies	0.07	0.07	-	-	-	-	-	-
Economics	0.08	* 0.06	-	-	-	-	-	-
Psychology	0.09	0.09	-	-	-	-	-	-
Biology	0.10	0.10	-	-	-	-	-	-
Sample size:	1,337	932	128	95	109	55	94	77
Proportion observed:		0.59		0.57		0.66		0.55
χ^2 test of joint sig:		0.00**		0.32		0.05+		0.03*

NOTES:

These data exclude the 18 percent of women who we can not match between the anniversary surveys and yearbooks. Although not listed, we also include graduation class in the χ^2 calculations, but their inclusion has relatively little effect on the results. MBA response rates are significantly higher than all other majors combined (at the 5% level), and than either potential MDs or JDs (at the 10% and 5% levels, respectively). Significance levels are distinguished by + (significant at 10%), * (at 5%), and ** (at 1%).

Table A-3: **Harvard Sample Earnings and Wage Estimates**

	All	MD	PhD	JD	MBA	MA	None
Salary and Wage Estimates at 15th (2000\$):							
If working:							
Gender-neutral	115.2	166.5	70.0	136.1	138.6	66.1	80.7
salary ('000s)	(74.9)	(59.5)	(27.5)	(69.5)	(107.4)	(39.8)	(51.8)
'Gendered' hourly	43.32	58.11	29.24	48.10	49.63	30.91	34.95
wage	(24.57)	(20.92)	(10.83)	(21.15)	(37.18)	(16.32)	(19.91)
Predicted log wage:	3.61	4.00	3.33	3.77	3.76	3.29	3.44
	(0.32)	(0.16)	(0.16)	(0.21)	(0.27)	(0.19)	(0.12)
If working	3.63	4.00	3.33	3.78	3.78	3.30	3.45
	(0.33)	(0.17)	(0.16)	(0.22)	(0.29)	(0.19)	(0.12)
If at home	3.53	4.03	3.36	3.74	3.71	3.25	3.41
	(0.28)	(0.11)	(0.18)	(0.17)	(0.21)	(0.18)	(0.13)

NOTES:

Reported mean (and standard deviations) of a subset of the controls included in the specifications in Table 5. (See the notes to Table 6 for the full set of controls.)

Table A-4: **Family-Friendly Firms**

Abbott Laboratories	First Tennessee Bank	Patagonia
ABN AMRO North America	Fleet Boston Financial	Paul Hastings*
AFLAC	Ford Motor	Pearson Education
Allstate Insurance	Genentech	Pfizer
American Airlines	General Mills	Phoenix Companies
American Express	General Motors	The PNC Financial Svcs Grp
American Home Products	Gibson, Dunn & Crutcher*	PricewaterhouseCoopers
Arnold & Porter**	GlaxoSmithKline	Principal Financial Group
Arthur Andersen	Goldman Sachs	Procter & Gamble
Bank of America	Hewlett-Packard	Prudential Financial
Bank One	Hoffman-La Roche	Republic Bancorp
Baptist Health South Florida	Household International	Ropes & Gray*
Bausch & Lomb	IBM	SAS Institute
Bon Secours Richmond Health	Inova Health System	S.C. Johnson & Son
Booz Allen Hamilton	Johnson & Johnson	Schering-Plough
BP America Upstream	JPMorgan Chase	Sears, Roebuck and Co.
Bristol-Myers Squibb	KPMG	Security Benefit Group
BryanLGH Medical Center	Kraft Foods	Simpson Thacher*
Carlson Companies	Lincoln Financial Group	The St. Paul Companies
Cigna	Liz Claiborne	State Street Corporation
Cinergy	Lucent Technologies	Sun Microsystems
Cisco	Marriott International	Synovus Financial
Citigroup	MBNA America Bank	Target
Cleary Gottlieb*	McDonalds Corporation	Texas Instruments
Computer Associates	Merck & Co.	TIAA-CREF
Corning	Merrill Lynch	Toms of Maine
Covington & Burling*	MetLife	TRW
Cravath, Swaine & Moore*	Morgan Stanley	Union Pacific Railroad
DaimlerChrysler	Morrison & Foerster	United Airlines
Debevoise & Plimpton*	Mutual of Omaha	USAA Life Insurance Co.
Deloitte & Touche	New York Life Insurance	The Vanguard Group
Discovery Communications	The New York Times	Verizon/Verizon Wireless
Eastman Kodak	Northern Trust	Vivendi Universal
Edward Jones	Northwestern Memorial	Wachovia
Eli Lilly	HealthCare	West Group
Ernst & Young	Novant Health	Wilmer Hale*
Fannie Mae	Novartis Pharmaceuticals	Zurich North America

NOTES:

Law firms marked with * reflect those included on the 2004 list of 'Top 10 Family-Friendly Firm', as designated by the Yale Law Women. The remaining firms are those included on the 2001 *Working Mother* Magazine's list of 'top 100' places to work. Firms listed with ** appear on both lists. *Working Mother* ranks corporations both by the number and types of work-family benefits offered, and by the proportion of employees who use them. We use the October 2001 rankings as roughly representative of the period 10 to 15 years after graduation for our cohorts. The Yale Law Women's listing can be found at <http://media.gibsondunn.com/fstore/pubs/YaleTop10.pdf>, and is based on a 2004 student-run survey.

Table A-5: Predicting Graduate Degree

	MD	PhD	JD	MBA	MA	None
Undergraduate Major: (excluded = English)						
Biology	0.613*** (0.066)	0.032 (0.041)	-0.203*** (0.019)	-0.061 (0.037)	-0.131*** (0.025)	-0.143*** (0.022)
Other sciences & engineering	0.047 (0.075)	0.310*** (0.095)	-0.146*** (0.028)	-0.088** (0.038)	-0.051 (0.050)	-0.038 (0.053)
Psychology	0.087 (0.060)	-0.006 (0.032)	-0.094*** (0.035)	0.046 (0.052)	0.032 (0.049)	-0.030 (0.041)
Economics	-0.069* (0.041)	-0.057** (0.023)	-0.100*** (0.035)	0.371*** (0.077)	-0.104*** (0.030)	0.003 (0.048)
Political science	-0.064 (0.047)	-0.055** (0.024)	0.241*** (0.078)	0.080 (0.065)	-0.105*** (0.031)	-0.088** (0.035)
Anthropology	0.218*** (0.080)	-0.042 (0.026)	-0.158*** (0.025)	-0.086** (0.034)	0.192** (0.075)	-0.041 (0.044)
Other social studies	-0.094** (0.038)	-0.036 (0.031)	-0.002 (0.057)	0.188** (0.080)	-0.029 (0.048)	-0.021 (0.051)
History	0.091 (0.060)	-0.019 (0.030)	0.029 (0.050)	0.041 (0.050)	-0.085*** (0.032)	-0.022 (0.041)
Played sports in college	-0.002 (0.030)	-0.047** (0.020)	-0.041 (0.031)	0.036 (0.028)	0.064** (0.032)	-0.014 (0.028)
Minority	0.077* (0.044)	-0.068*** (0.017)	0.035 (0.042)	0.051 (0.038)	-0.020 (0.036)	-0.045 (0.033)
Region in High School: (excluded = California)						
District of Columbia	-0.076* (0.042)	0.014 (0.049)	0.203** (0.096)	0.016 (0.065)	0.021 (0.063)	-0.119*** (0.028)
South	-0.055 (0.045)	0.021 (0.049)	0.202** (0.092)	0.080 (0.072)	-0.115*** (0.032)	-0.077* (0.040)
Midwest	-0.023 (0.049)	0.003 (0.041)	0.125 (0.080)	0.049 (0.062)	-0.090** (0.038)	-0.048 (0.044)
Pseudo R ²	0.24	0.17	0.14	0.15	0.12	0.07

NOTES:

Each column reflects the coefficients from a different probit regression in which the dependent variable is whether each woman holds a specific graduate degree (*e.g.*, a JD). The sample used ($N = 829$) excludes those women that we cannot observe in the graduation yearbooks. We also include as right-hand side variables majoring in arts or cultural studies, or more generally in a small major, year of graduation, undergraduate dorm, private high school attendance, whether an individual grew up in a top-25 city or in a low-density state, or in the northeast, mid-Atlantic, the west (other than CA), or outside the U.S. We report the marginal effects (with standard errors in parentheses). Significance is defined as ***, **, and * significant at the 1%, 5%, and 10% level, respectively.

Table A-6: Predicting a Pre-Birth Flexible Work Environment

	All	JD	MBA	MA	None
Graduate degree (excluded = MBA)		0.323 (0.206)	- -	0.315 (0.216)	0.520** (0.221)
Extra MA		0.036 (0.138)	0.330* (0.176)	0.598*** (0.187)	- -
<u>Undergraduate Major: (excluded = English)</u>					
Sciences	0.082 (0.165)				
Arts	0.423*** (0.135)				
Economics & social studies		0.311* (0.161)	-0.091 (0.142)	-0.095 (0.210)	-0.160 (0.250)
Other social sciences		0.252* (0.133)	-0.082 (0.180)	0.293** (0.133)	0.011 (0.156)
Played sports in college		-0.219* (0.119)	0.022 (0.122)	-0.272** (0.122)	0.089 (0.169)
<u>Race: (excluded = Caucasian)</u>					
Asian	0.006 (0.100)				
Other minority	-0.022 (0.146)				
<u>Region in High School: (excluded = Midwest)</u>					
Massachusetts		-0.045 (0.155)	0.074 (0.165)	0.078 (0.170)	-0.576** (0.229)
New York City	-0.063 (0.175)				
Other mid-Atlantic	0.196 (0.122)				
California		-0.313 (0.213)	0.226 (0.211)	0.393* (0.209)	-0.469* (0.247)
Big city	-0.128 (0.101)				
Low-density state	-0.130 (0.120)				

NOTES:

Results reflect coefficients from an OLS regression predicting the probability of working in a flexible environment 10 years after college, given one's graduate education and factors observed at college graduation. (Also included, but not shown here, include undergraduate dorm dummies, completing an additional (non-MA) degree, majoring in history or cultural studies or choosing a small major, attending a private high school, and growing up in Washington, D.C., outside the U.S., or in the the remainder of the northeast, the south, or the west, and graduation class interacted by degree.) The first column reports the marginal effect for factors that are not interacted by degree; the following four columns report the coefficient on the interaction term between the given control and each graduate degree. The sample included are the 286 women in the Harvard longitudinal sample. The R^2 and adjusted R^2 are 0.42 and 0.23, respectively. Statistical significance is indicated by * at 10%, ** at 5%, and *** at 1%.